

**THE REAL IDENTITY OF
DISCOELIUS STRIGOSUS COSTARRICENSIS BERTONI
(HYM.: VESPIDAE: EUMENINAE)**

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Abstract.—The identity of *Discoelius strigosus costarricensis* Bertoni = *Zethus strigosus* Saussure revised status, is solved and *Zethus smidtianus* n. sp. is described based on the mis-identification of *costarricensis* by Bohart and Stange, 1965 and subsequent authors.

In 1925 Bertoni described *Discoelius strigosus costarricensis*, based on material from San José, Costa Rica. Forty years later, Bohart and Stange (1965) elevated the name *costarricensis* to species, based on material they believed they determined correctly, despite that they did not examine the type, considered to be—with the rest of Bertoni collection—locked in the basement of a bank in Asunción, probably the Banco de Fomento (Willink, 1982; Carlos Aguilar pers. comm.).

In 1991, thanks to the negotiations of Dr. Blanca Barrios, the Instituto Agronómico Nacional (IAN) gave as donation to the Museo Nacional de Historia Natural del Paraguay, Inventario Biológico Nacional (IBNP) an insect collection that belonged to A. W. Bertoni. In 1995, thanks to the encouragement given by James Carpenter, Abraham Willink and Arnold Menke, I started to work this collection, finding in it a large amount of vespidae type material described by Bertoni as well as interesting additional material that included specimens determined with unpublished names. The collection said to be deposited in the Banco de Fomento is no longer there and seem to be referable to the one IAN donated to the IBNP. Another insect collection that belonged to Bertoni was deposited in Puerto Bertoni (Garcete Barrett, 1996), until very recently, when John Kochalka and I brought it to the IBNP to be fully curated due its poor state of conservation. The complete restoration of these collections still awaits a long time, but in the mean while the discovery of the type of *Discoelius strigosus costarricensis* and a specimen identified under an unpublished name give light to a problem that may not be overlooked.

Zethus strigosus Saussure, 1875

Zethus strigosus Saussure, 1875. Smithsonian Misc. Coll. 254: 42. Lectotype male, Orizaba, Veracruz, México (Genève).

Zethus fortistriolatus Cameron, 1907. Entomologist 40: 82. Holotype female, Nicaragua (London).

Zethus mimus Zavattari, 1912. Arch. f. Naturgesch. 78 (Abt. A), Heft 4: 64. Holotype female, "Brasilien" (Berlin).

Discoelius strigosus costarricensis Bertoni, 1925. Rev. Soc. Cient. Paraguay (2) 1: 75. Lectotype female, San José, Costa Rica (Bertoni collection, IBNP), here designated [examined], **revised status**.

The description given by Bertoni (1925) for *Discoelius strigosus costarricensis* is as follows:

"*Foem.* Atra, obscure sericea; abdominis primo segmento nitido, apice flavo; alis nigris, apice albis. clypeo truncato, striato-punctato[*sic!*]; fronte striata.

Se le acerca la var *d* de Saussure (Am. Sol. Wasps. p. 42). La forma típica de Méjico es más clara y adornada, con las alas sub hialinas. Se asemeja en el peciolo a los *Zetamenes* W. Bertoni y en el color imita a *Mischocyttarus smithi*, etc.

Col. Bertoni, San José de Costa Rica (C. Amér.)."

This is a very short description but fits perfectly with a single female in the Bertoni collection, and labeled "Costa Rica, S. José", "3167.", "*Discoelius strigosus* Sss. var. *e* ined.". I also labeled it with the reference number "B. 209" as part of the recovery work. It bears no type label, but judging from the external evidence (Rec. 72B of the International Code of Zoological Nomenclature) there is no doubt this is a type specimen, and I designate it as Lectotype according with Rec. 73F and Art. 74b of the International Code of Zoological Nomenclature, taking into account that Bertoni did not mention how many specimens he saw.

The specimen fits with the key and description given by Bohart and Stange (1965) for *Zethus strigosus* Saussure, but is darker, with yellow marks as follows: conspicuous mandibular band and subapical band on tergum I, this last suddenly becoming thinner and briefly disappearing medially; less conspicuous are: scrobal spots, tiny spot in the inner orbit, tiny spot behind the posterior angle of the eye, mostly beneath flagelomeres II-X, a pair of indistinguishable tiny humeral spots, a pair of thin longitudinal bands on the posterior face of the propodeum, and lateral, almost indistinguishable, indications of subapical bands on terga II, IV-V and sterna III, IV-V, as well as basolateral spot on tergum VI. The wings are more or less black, mainly along the costal area of the forewing, this last having a whitish tip.

I compared this specimen with reference material of *Zethus strigosus* determined by Bohart and Stange: Mexico: Nayarit, 6 mi. E. San Blas, 4. ii. 64, 1 female (E. I. Schlinger col.) y 1 male (M. E. Irwin col.), UCD; Veracruz, Jalapa, 1 female, UCD; Oaxaca, 12 mi S. Chivela, 18. viii. 1958, 1 male (L. A. Stange y A. S. Menke cols.), UCD; Panama: Potrerillos, 5. v. 35, 2 males UCD.

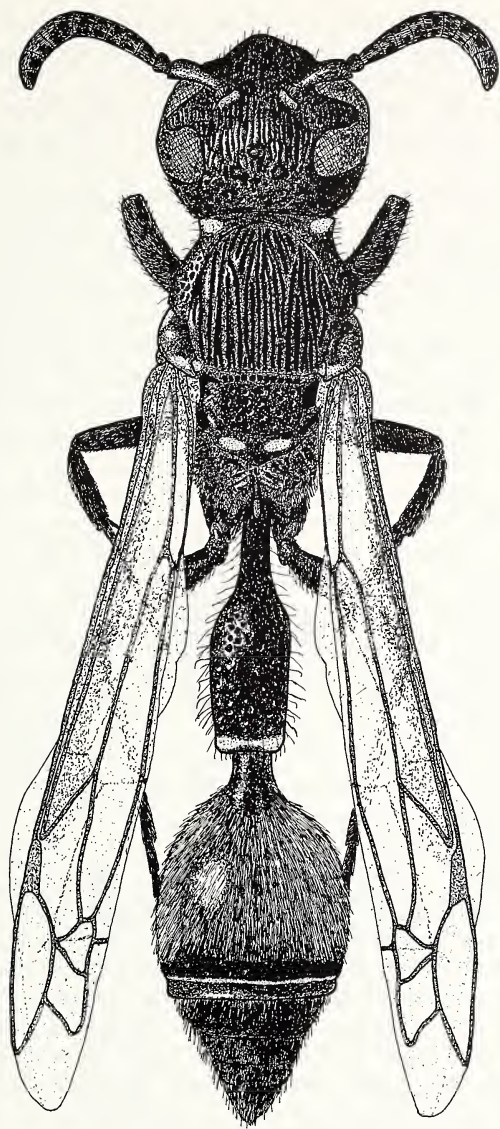
I was unable to find any structural difference between the Lectotype of *strigosus costarricensis* and the reference material. About the color pattern I must say that it is still in the range of variation within the species, existing only a remarkable reduction of the yellow markings, the male from Nayarit is the closest in this respect. The only really remarkable difference is the wing pattern, almost uniformly hyaline yellowish in all the additional specimens.

***Zethus smidtianus*, n. sp.**

[*Zethus costarricensis*: Bohart and Stange, 1965. Univ. Calif. Pub. Entom. 40: 97. Subsequently: Stange, 1978. Acta Zool. Lilloana 33: 78 (key); West-Eberhard et al., 1995. Hym. Costa Rica: 574. Misidentification].

I use this name in order to commemorate Bertoni's memory, who labeled with it a female specimen that perfectly fits with the key and description given by Bohart and Stange (1965) for their concept of *Zethus costarricensis*.

Holotype female (Figs. 1, 2): Length from antennal insertions to apex of tergum



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Fig. 1. *Zethus smidtianus* n. sp., female habitus.

II about 13 mm. Black with yellow as follows: subapical and lateral marks on clypeus, scrobal spots, humeral spots, anterior and inner posterior corners of the tegulae, parategulae, a pair of oval transversal spots on metanotum, subapical bands on terga I-II and sternum II, longitudinal anterior line on fore and mesotibiae. Wings hyaline yellowish with light brownish infuscation along the costal region of the forewing. Venation dark brown.

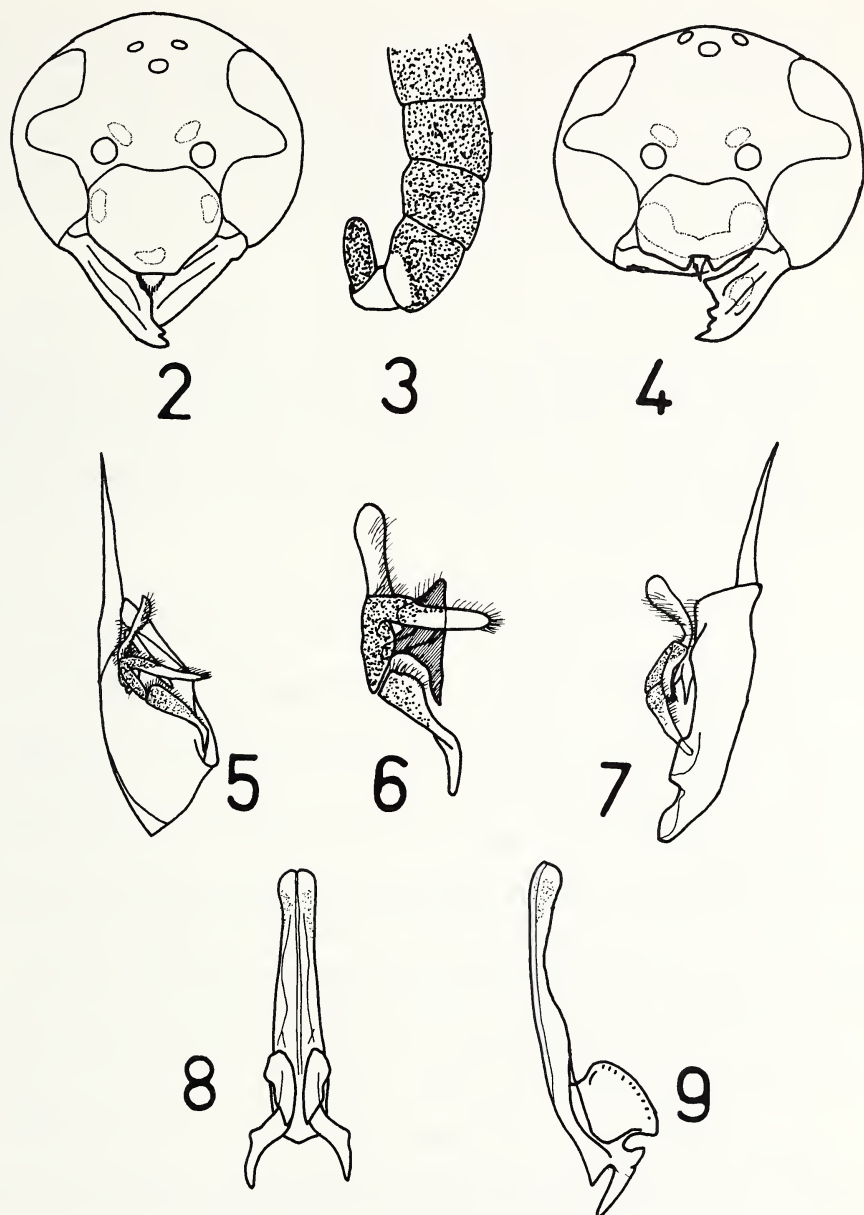
Clypeus striatopunctate, frons longitudinally, rather irregularly striate and with strong punctures into the striae, ocular sinus striatopunctate, vertex and gena with strong punctuation, pronotum strongly punctate, some longitudinal wrinkles present on the subhumeral area, mesoscutum longitudinally, rather irregularly striate and with punctuation more casual than on frons, disk of scutellum flat, polished and with large, sparse, rather shallow punctures and very rare almost absent micropunctuation on the intervals, upper face of metanotum sculptured as scutellum, posterior face of metanotum without macropunctures, upper and posterior face of propodeum with coarse reticulation that obscures the transversal striae that otherwise are well developed towards the middle, lateral face of the propodeum with large, very sparse punctures that progressively concentrate towards the anterior corner, mesopleura strongly punctate, tergum I polished and with strong punctuation except for the subapical band, that lacks punctures, tergum II moderately punctate and with macropunctures concentrated on a polished subapical band, this last having a very narrow impunctate apical region followed by a narrow crenulated furrow preceding the apical lamella, which is slightly raised, tergum III subapically with macropunctures finer than those on tergum II, almost immediately followed by a very narrow crenulated furrow that precedes the apical lamella, this one not raised at apex.

Head, mesoscutum and tergum I with pale, sub-erect, sparse pilosity, specially sparse on the latter, remaining terga with fulvous, decumbent, relatively dense pilosity, denser on tergite II. Metanotum and mainly propodeum with pale, decumbent, relatively dense pilosity as well as suberect pilosity.

Clypeus truncated apically, interantennal carina well developed and entering into the clypeus, OOL: POL = 3 : 2, 2, notauli almost complete, propodeum with a distinct medial longitudinal carina, tergum I in dorsal view suddenly expanding after the stem and more or less parallel sided, subapical polished band longer submedially, here it is longer than the apical band, this last being longer than a midocellar diameter, midtibia with two spurs, the hind one being a bit longer.

Male (Figs. 3, 4, 5, 6, 7, 8 and 9): Similar to the female. Length from antennal insertion to the apex of tergum II about 8 mm. Yellow color on clypeus forming a wide U-shaped mark, also yellow are a mandibular spot and the inner apex of flagellomere VIII, as well as almost the whole inner face of flagellomeres IX and X (in the UCD male there is not yellow on flagellomere VIII and flagellomere IX is yellow only at apex). The punctuation on frons and mesoscutum is more evident than in the female, being the sculpture almost striatopunctate. Clypeus with an apical notch. Genitalia similar to those figured by Bohart and Stange (1965: 201, figs. 304 y 305) for *Z. evansi*, but the mast ("asta" following Giordani Soika, 1978: 7, fig. 1) of the cuspis lacks pilosity on the lower margin and the apex of the basivolsella is more expanded.

Holotype: Costa Rica: San José, 3168, female, Bertoni Collection, IBNP (I labeled it with the reference number "A: 41" as part of the recovery work).



Figs. 2–9. *Zethus smidtianus* n. sp. 2, female. 3–9, male. 2 and 4. Head in frontal view. 3. Last antennal segments. 5. Paramere and volsella in inner profile view. 6. Detail of the volsella. 7. Ventral view of paramere and volsella. 8. Ventral view of the aedeagus. 9. Profile view of the aedeagus.

Paratypes: Guatemala: Sacatepéquez, Capetillo, 5000 ft. 20. viii. 1974, 1 female (C. y P. Vaurie cols., F. Johnson leg.), UCD. Costa Rica: San José, 1913, 1 male, UCD; San José, San Antonio de Escazú, 1300 msnm, 1 male, AMNH.

There are additional specimens known (Bohart and Stange, 1965) but I was unable to examine: Colombia: Cauca, Villa Elvira, 1 female, Giordani Soika Collection; Costa Rica: San José, 1 female, UCD; San José, 1 female (M. Valerio col.), USNM. According to Menke (in litt.), who sent to me the complete data, this later specimen seems to be conspecific with photographs of the holotype I sent to him.

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